

This listing of claims will replace all prior versions, and listings, of claims in the application:

**Listing of Claims:** Please amend the claims as follows

**We claim:**

**Claim 1. (Currently Amended)** An isolated nucleic acid molecule which is:

- a) a nucleic acid molecule comprising a the polynucleotide sequence of SEQ ID NO: 1,
- b) a nucleic acid molecule comprising a polynucleotide sequence having ~~sufficient~~ homology to be functionally analogous at least 80% homology to the polynucleotide sequence of a),
- c) a nucleic acid molecule which, as a consequence of the genetic code, is degenerate to the polynucleotide sequence of a) or b), or
- d) a nucleic acid molecule which is an RNA equivalent of the nucleic acid molecule of a) or b), or is an RNA equivalent of a degenerate of said nucleic acid molecule of a) or b) modified and functionally analogous to the polynucleotide sequence of a) through c), wherein said functionally analogous nucleic acid molecule comprises a deletion, addition, substitution, translocation, inversion and/or insertion in said polynucleotide sequence

wherein each of the polynucleotides of (a) to (d) encodes a polypeptide having a behavior which is analogous to the AKAP18 $\delta$  polypeptide of SEQ ID NO: 2.

**Claim 2. (Currently Amended)** The nucleic acid molecule according to claim 1, which encodes a polypeptide having the sequence set forth in SEQ ID NO: 2 wherein the polynucleotide sequence specified under b) has at least 80% homology to a polynucleotide sequence as specified under a).

**Claim 3. (Previously Presented)** The nucleic acid molecule according to claim 1, wherein said molecule is a genomic DNA, a cDNA and/or an RNA.

**Claim 4. (Previously Presented)** A vector comprising a nucleic acid molecule according to Claim 1.

**Claim 5. (Previously Presented)** A host cell comprising the vector according to claim 4.

**Claim 6. (Withdrawn)** A polypeptide encoded by a nucleic acid molecule according to Claim 1.

**Claim 7. (Withdrawn)** A recognition molecule directed against a nucleic acid molecule according to Claim 1 or, a vector, or a host cell based thereon or a polypeptide encoded thereby.

**Claim 8. (Withdrawn)** The recognition molecule according to claim 7, wherein said molecule is an antibody, an antibody fragment and/or an antisense construct.

**Claim 9. (Currently Amended)** A pharmaceutical composition comprising a nucleic acid molecule according to Claim 1, ~~a vector, or a host cell based thereon, a polypeptide encoded thereby or a recognition molecule corresponding thereto, together with~~ and a pharmaceutically tolerable carrier.

**Claim 10. (Currently Amended)** A kit which comprises a nucleic acid molecule according Claim 1, ~~a vector, or a host cell based thereon, a polypeptide encoded thereby or a recognition molecule corresponding thereto, or a pharmaceutical composition based thereon~~ and a pharmaceutically tolerable carrier.

**Claim 11. (Withdrawn)** A method for the detection of an AKAP-PKA interaction, comprising

- a) providing
  - (i) a first vector comprising a nucleic acid molecule according to Claim 1 and a first marker, and
  - (ii) a second vector comprising a second nucleic acid molecule which encodes a regulatory subunit of a protein kinase and a second marker,
- b) incorporating the first and second markers in a cell, thereby transfecting the cell, and
- c) performing a fluorescence resonance energy transfer (FRET) measurement, thereby

detecting the AKAP-PKA interaction.

**Claim 12 44. (Withdrawn)** The method according to claim 11 comprising detecting an interaction between AKAP and RII $\alpha$ , RII $\beta$ , RI $\alpha$  and/or RI $\beta$ .

**Claim 13. (Withdrawn)** A method for the identification of an inhibitor of AKAP and/or a PKA comprising detecting interaction of AKAP and PKA according to the method of claim 11 in the absence or presence of the inhibitor to be investigated.

**Claim 14. (Withdrawn)** A method for the examination of membrane-permeability of a test molecule comprising producing a conjugate of the test molecule and a membrane-permeable AKAP-PKA inhibitor and detecting AKAP-PKA interaction according to the method of claim 11 in the absence or presence of said conjugate or said test molecule.

**Claim 15. (Withdrawn)** A method for the detection of an AKAP-PKA interaction or for the identification of an inhibitor of AKAP and/or PKA and/or of a membrane-permeable peptide comprising employing a nucleic acid molecule according to Claim 1, a vector, or a host cell based thereon, a polypeptide encoded thereby, a recognition molecule corresponding thereto, a pharmaceutical composition based thereon, or a kit based thereon.

**Claim 16. (Withdrawn)** The nucleic acid molecule according to claim 1, wherein the polynucleotide sequence specified under b) has at least 90% homology to the polynucleotide sequence as specified under a).

**Claim 17. (Withdrawn)** The recognition molecule according to claim 8 which is an RNA interference molecule.

**Claim 18. (New)** The nucleic acid molecule according to claim 1, which consists of the polynucleotide sequence set forth in SEQ ID NO: 1.

**Claim 19. (New)** A nucleic acid molecule according to claim 1, which is:

(a) a nucleic acid molecule comprising the polynucleotide sequence of SEQ ID NO: 1;

(b) a nucleic acid molecule which encodes a polypeptide having the sequence of SEQ ID NO: 2;

- (c) a nucleic acid molecule which consists of the polynucleotide sequence of SEQ ID NO: 1; or
- (d) a nucleic acid molecule which encodes the polypeptide sequence of SEQ ID NO: 2.

**Claim 20. (New)** The nucleic acid molecule according to claim 1, wherein said behavior analogous to AKAP18 $\delta$  comprises an ability of said encoded polypeptide to anchor protein kinase A (PKA) with Ca<sup>2+</sup> channels or receptors when expressed in cells.